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ABSTRACT

In this speech, the author examines the concern of most educators about the tendency to solve budgetary problems through increasing class size. The author agrees that class size does affect educational quality, but he suggests that other factors greatly influence quality as well. He suggests that the tendency to sacrifice nonteaching personnel in order to keep class size down may hurt rather than help the cause of quality education. The author contends that, for successful teaching and learning, the major issue is not class size but rather how to manipulate the resources available to the schools so that the minimum needs of every teacher and child are satisfied. Several tables show the average class size for various elementary grades in Ontario in 1972 and 1973 and the variations in class size in the province. (Author/DN)

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CLASS SIZE: CONFRONTATION OR CONSTRUCTIVE COMPROMISE?

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Any person dedicated to the education of Ontario's children cannot be other than distressed by the impact of spending ceilings on the character and quality of the teaching-learning experience in the classrooms of this province. One effect of the ceilings, magnified perhaps by declining elementary enrolments, has been a tendency to solve budgetary problems by increasing class size. This tactic has produced at least two very undesirable consequences: first, a developing confrontation between teachers and their Boards and the Ministry over the issue of class size and, second, a split of local faculties into two groups....classroom teachers and everybody else. 'Everybody else' (administrators, consultants, coordinators, specialists, itinerant teachers, etc.) then becomes the group that can be sacrificed to maintain average class size at its current level.

While I wholeheartedly support the effort to maintain quality education and do believe that class size has an important bearing on quality, I am concerned both that the tactic of confrontation may backfire and that the sacrifice of 'everybody else' to class size may significantly reduce rather than enhance the cause of quality education. I believe that part of the current dilemma is based upon an oversimplified view of the issue of class size, a tendency to ask the wrong questions and a consequent failure to consider the whole array of possible solutions. In short, given current political realities, I believe the cause of quality education is better served by a honest search for constructive compromises

EA 005 812

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rather than confrontation. In the remainder of this paper I would like to: (a) examine some aspects of the class size question in terms of a few simple facts about current class sizes in London, (b) indicate what I believe to be the central issue and (c) suggest a general strategy for coming to terms with the underlying problem. Since I take it for granted that class size 'matters', I will not review the research literature here. I have, however, provided an up-to-date bibliography of pertinent studies.

Some Aspects of the Class Size Issue

Much of the discussion about class size seems to start with questions like: "What is the optimal elementary class size?"; "What is the maximum class size possible for quality education?"; "What is a reasonable average size for elementary classes?"; "Our average class size at the elementary level is 30.2; isn't that too high?"; "Can any elementary teacher really do a good job with more than 25 pupils?" It seems to me that the discussions which start with questions of this kind are generally fruitless and tend to end up with proponents on either side of the issue "using" research findings to support their respective positions. Part of the futility of such discussions is that an essentially unanswerable question is being asked, the problem is grossly oversimplified and, as a result, the underlying issue never really clarified. Let us address each of these points in turn.

No Best Class Size

Although class size 'matters', it does not produce its effects on the teaching-learning situation in isolation from the other ingredients in that situation. The nature and magnitude of the effects of class size

depend at least upon: the experience and competence of the teacher; the ages of the children; the homogeneity of the children with respect to both ability and basic skill development; the instructional methods used; the school's organizational plan; the subject(s) being taught; the presence or absence of disturbed children in the class; the adequacy of physical plant and material resources, and the availability of teacher helpers, in the form of teacher aides, remedial reading teachers, consultants, counsellors, psychologists, volunteers, etc., i.e., 'everybody else'.

To clarify this general point, contrast the following two teaching-learning situations.

Miss Jones, a first-year teacher, has a grade two class of 30 children who range in ability from IQ 80 to 130 and in reading skills from three children who have not yet learned to recognize all of the letters to a group of five who have fairly complete mastery of their decoding skills.

She is located in a portable classroom next to an old 'inner-city' school that has neither a library-resource centre nor gymtorium. Two children are recent immigrants and have limited ability to communicate in English; one of the older, dull boys is already well on the way to a delinquent career. Miss Jones is attempting to use a small-group approach to teaching the various basic skills but this effort is chronically interupted by control or discipline problems. She has no substantial help available to her in the form of a teacher aide, remedial reading service, psychologist or elementary guidance counsellor.

Mr. Brown, an experienced vice-principal, conducts his grade 8 class of 30 students in a new suburban, open-plan school. The children, coming almost exclusively from families headed by professional people,

are well motivated, have good mastery of the basic skills and have developed the capacity for a good deal of independent work. There is only one problem youngster and his problems are being attended to by the school's psychologist. This new school has an elaborate library-resource centre run by a teacher-librarian, ETV, gymtorium, cafeteria, and access to excellent outdoor science facilities. Mr. Brown is able to turn over most of his clerical work to a teacher aide and has a group of volunteer parents willing to help with the new electives program initiated this year at his school.

It seems quite clear that, *even though both classes contain 30 pupils*, Miss Jones' situation is going to be very trying for her and not very profitable for her students, whereas Mr. Brown and his students will probably have an excellent year. One might argue that Mr. Brown could probably handle another 5 or 6 students quite comfortably but that Miss Jones probably has 7 or 8 too many students to do a good job. In any event, I think these examples should make it clear that the question of optimal or maximum class size is at best a highly oversimplified one. The only appropriate response to the question 'What is the best class size?' seems to be 'It depends....'

Average Class Size: The Seductive Statistic

A frequent jibe thrown at statisticians is that "Figures never lie but liars figure." Whatever the merits of that saying, it *is* true that unwitting use of a single statistic to describe a very complex situation can readily seduce the unwary into a variety of overgeneralizations and misconceptions. Average class size is such a seductive statistic. Let me illustrate this phenomenon by reference to some data concerning elementary class sizes in the London system as of September, 1972 and

September, 1973. On the first of these occasions the average class size for all regular, kindergarten-to-grade 8 classes was 27.12; a year later it was 28.77, an increase of about one and one-half students per class.

Sounds like a pretty good situation, doesn't it? Perhaps a little higher than the ideal of 25, but not altogether unreasonable. With just 28 or 29 students teachers ought to be able to do a pretty good job. Maybe a little too high for the primary level children but not bad at all for the senior grades. If you've been agreeing with this interpretation, the old average has sung his siren's song well.

Let's look a little further. Suppose we calculate a few more averages. Table 1 shows average class sizes for both 1972 and 1973 separately for kindergarten, grades 1 to 3, 4 to 6, and 7 and 8. What these data show is that average class size varies as a function of grade level. The 'average' kindergarten only has 20 or 21 pupils, but the 'average' senior grade has 30 or 31.

The situation obviously isn't as simple as the overall average suggested. How about a few more calculations. Table 2 gives the average size for single-grade and split-grade classes for 1972 and 1973 and reveals a significant shift in the situation. The overall increase in the average class size has not affected all types of class in the same way. In 1973 we have not only a larger percentage of split-grade classes (21.9% vs 18.7%) but the split-grade classes which used to contain fewer students than single-grade classes are now almost the same size. Is that all right, or should we try to keep split-grade classes somewhat smaller?

Enough of averages. Let's look at the data another way to see if we can get a more complete overall picture. Figure 1 gives a percentage

frequency distribution of class sizes for all regular kindergarten to grade 8 classes for both 1972 and 1973. This figure reveals that, even though the average class size in 1973 was 28.77, less than one-third of the classes actually contain from 27 to 30 students--all the others are either larger or smaller. Table 3 displays the same data in a slightly different way. By examining this Table it becomes quickly apparent that increasing the average class size from 27.12 to 28.77 has increased the percentage of classes containing more than 30 students from 23.5 to 41.7.

I trust that the foregoing has illustrated the pitfalls of discussing the issue of class size in terms of the average.

If not class size, what is the issue?

Perhaps the major difficulty with most discussions of class size is that they become so centered around averages, maximums and optimums that they fail to address the important broader issue, of which class size is one facet. That broader issue is....

Given existing resources, how can the various elements which affect each teaching-learning situation be manipulated so that every teacher feels he has the opportunity to do at least a minimally acceptable and professionally responsible job, and every child has at least a minimally acceptable environment in which he can learn?

One of the important elements is class size. The question, therefore, is *not* what is the best average class size, but rather *In how many or which classes does the sheer number of children have a negative impact on teaching and learning?* The next two obvious questions are: 'How do you identify such classes?' and 'What can you do about it?'

There are, of course, no obvious, generally accepted answers to the last two questions. It is also unlikely that the kind of rigorous research necessary to provide reasonably objective answers will be forthcoming in the immediate future. I believe, however, that with the questions formulated in this way we can begin to develop some practical courses of action and create some constructive compromises. Let's consider each question in turn.

Identifying Problem Classes

How can one identify classes in which the sheer number of children has a negative impact on teaching and learning? In the absence of appropriate research findings, it seems to me that the major vehicle in the identification process has to be the opinion of expert, experienced educators combined with the thoughts, feelings and opinions of the teachers and the children themselves. Given current realities, who is in a better position to judge?

Although such a process would involve the careful examination of each and every classroom in terms of the factors which either accentuate or mitigate the effect of class size, it need not become an overwhelming task. It is not difficult to imagine the development of an appropriate set of check lists and/or questionnaire(s) which would allow administrators, teachers and children to provide the information necessary to identify those problematic situations needing careful scrutiny. A number of the key dimensions, in addition to class size, which affect the quality of the teaching-learning situation have been identified and the instruments for assessing some of them now exist, at least in rudimentary form. It seems quite reasonable to expect that a school system which undertook

this task could develop a satisfactory identification process within a two or three year period. The necessary ingredients are cooperation, hard work and a spirit of constructive compromise. It seems to me a much easier task to get consensus on individual unacceptable situations than on averages.

What can be done about classes that are too large?

Assume that it is possible to identify classes in which the sheer number of children interferes significantly with desirable educational practice. What can be done? Although the immediate response to this question is almost universally 'Hire more teachers.', this is only one of a series of possible courses of action and may not, in many instances, be the best one. In any event, I will now outline at least four general types of possible response to the problem and give some specific examples within each type.

Type I - Increasing manpower.

This kind of response involves a direct attempt to attentuate the effect of large classes by increasing the supply of effective teacher-power. At least five different different strategies can be employed: (1) hire more teachers and/or hire more experienced teachers (2) hire teacher aides (3) use volunteers (4) have capable older students assist in teaching younger ones (5) reduce some of the clerical load on teachers by hiring additional secretarial staff and/or employing computers for such tasks as test scoring, report cards, attendance records, etc.

Type II - Changing instructional practices.

This type of response requires shifts, where possible, to instruc-

tional methods that consume less teacher time. At least four different strategies might be employed: (1) greater use of self-instructional materials (2) increased availability of ETV, resource centres, listening centres etc. (3) use of a tutorial approach in certain subject areas with certain classes (4) independent study for credit in certain subjects for selected senior classes. This might combine a correspondence course approach with regularly scheduled ETV productions.

Type III - Redistribution of pupils and/or time.

This response involves reducing the negative effect of large classes directly by making them smaller for all or part of the instructional day. There are at least two possibilities: (1) amalgamate existing small classes into larger ones by transporting children and (2) have staggered starting times for instruction. This involves having some students start at 9 o'clock and others at 10 so that all students are involved in a smaller class situation for at least part of the day.

Type IV - Redistribution and/or reallocation of attenuators.

This strategy leaves existing class size as is and redistributes or reallocates the factors which magnify class size effects. There are an almost unlimited number of possibilities: (1) ensuring where possible that large classes do not contain disturbed children (2) assigning more experienced teachers to larger classes (3) focusing teacher helpers primarily in schools where the classes are large, etc.

These four general types of possible response are those which either exist as common practice or occurred to me as I thought about the problem. I am quite sure that groups of imaginative, experienced educators can create many other practical courses of action.

Summary

Let me briefly summarize the points I have been trying to make.

Most educators are legitimately concerned about the tendency to solve budgetary problems by increasing class size. Class size does affect quality.

An unhappy trend exists toward the development of a series of confrontations and a split of faculties into classroom teachers and everybody else. The sacrifice of 'everybody else' may hurt rather than help the cause of quality education.

The focus of attention on average class size has oversimplified and obscured the major issue, viz., how to manipulate the resources available to us so that every teacher and child has at least the minimum things they need for successful teaching and learning. Energetic and vocal advocacy of quality education is a never-ending responsibility of everybody involved in the process.

Identifying each and every less-than-adequate teaching-learning situation and responding to each with a variety of possible remedies is advocated rather than a series of polemics on averages, maximums or optimums.

Should classroom teachers and 'everybody else' honestly pursue this course and make whatever constructive compromises are possible, it may well be that some additional teachers will still be required to preserve a minimum level of quality. In such circumstances I am convinced both that a community-wide consensus of need will be easier to establish and the necessary funding provided. It is, after all, much easier to dismiss an 1.5 increase in average class size than the plight of the Miss Joneses and their students.

BIBLIOGRAPHY

Anderson, G. & Walberg, H. Class size and the social environment of learning: a replication. *The Alberta Journal of Educational Research*, 1972, *18*, 277-286.

Burbidge, M. Class size, a candid approach. *British Columbia School Trustee*, 1970, *26*, 12-14.

Flinker, I. Optimum class size: what is the magic number? *The Clearing House*, 1972, *46*, 471-473.

Gipe, M. Class size: value vs dollars. *California Education*, 1966.

Haberman, M. & Larson, R. Would cutting class size change instruction? *National Elementary Principal*, 1968.

Hutchison, T. Measuring the immeasurable? Class size research. *B.C. Teacher*, 1969.

Johnson, M. & Scriven, E. Class size and achievement gains in seventh and eighth grade English and mathematics. *School Review*, 1969.

Mallinson, T. J. Learning. *Monday Morning*, 1972.

McKenna, B. H. The continuing importance of class size. *Staffing the Schools*. Bureau of Publications, Teachers College, Columbia University, New York, 1965.

Mitchell, Bruce M. Small class size: A panacea for educational ills? *Peabody Journal of Education*, 1969.

National Education Association, Research Division. Class size in secondary schools. *N.E.A. Research Bulletin*, 1965, *43*, 19-23.

National Education Association, Research Division. Class size in elementary schools. *N.E.A. Research Bulletin*, 1965, *43*, 106-109.

National Education Association of the United States, Research Division. *Class Size*. Research Summary 1968-S1. Washington, 1968.

National Education Association, Research Division. Teachers and Principals agree on best class size. *N.E.A. Research Bulletin*, 1961.

Olson, M. N. Classroom variables that predict school system quality. *IAR Research Bulletin*, 1970, *11*, 1-11.

Olson, M. N. Identifying quality in school classrooms: some problems and some answers. *Exchange*, 1971, *29*, 1-11.

Ross, D. & McKenna, B. *Class size: the multi-million dollar question.* Institute of Administrative Research, Columbia University, 1965.

Shane, H. Class size and human development. *N.E.A. Journal*, 1961, *50*, 30-32.

Shapson, S. M. *Optimum class size? A review of the literature.* Research report of the Board of Education for the City of Toronto, 1972.

Sitkei, E. George. *The effect of class size: a review of the research.* (ED043 124) Washington, D.C., U.S. Department of Health, Education, and Welfare, Office of Education, ERIC, 1968.

Stephens, L. & Berryman, C. Effects of class size and instructional method on attitudes toward the teaching profession. *Contemporary Education*, 1968.

Trott, V. *What research says about the effect of class size on scholastic attainment.* Metro Toronto Educational Research Council, Toronto, 1965.

Vincent, W. S. Class Size. *Encyclopedia of Educational Research, 4th Ed.* Macmillan, Toronto, 1969.

Vincent W. S. Further clarification of the class size question. *IAR Research Bulletin*, 1968, *1*, 1-3.

Vincent W., McKenna, B. & Swanson, A. The question of class size. *IAR Research Bulletin*, 1960, *1*, 1-4.

Woodson, M. Effects of class size as measured by an achievement test criterion. *IAR Research Bulletin*, 1968, *8*, 1-6.

TABLE 1 Average Class Size by Grade Level for September, 1972 and September, 1973.

Grade Level	Year			
	1972		1973	
	Number of Classes	Average Size	Number of Classes	Average Size
Kgn	141	20.85	145	20.57
1-3	356	26.20	309	28.24
4-6	355	29.15	331	31.28
7-8	225	29.31	214	31.23
K-8	1077	27.12	999	28.77

TABLE 2 Average Class Size by Single-Grade and Split-Grade Classes, Grades 1 to 8.

Type of Class	Year						Increase In Average Class Size
	1972			1973			
	Classes		Average Size	Classes		Average Size	
	N	%		N	%		
Single-grade	756	81.3	28.31	666	78.1	30.20	1.89
Split-grade	174	18.7	27.24	187	21.9	29.91	2.67

TABLE 3 Percent and Cumulative Percent of All Kindergarten to Grade 8 Regular Classes by Size as of September, 1972, and September, 1973.

SEPTEMBER, 1972			SEPTEMBER, 1973		
Class Size	Kdgn. to Gr. 8		Class Size	Kdgn. to Gr. 8	
	%	Cumulative %		%	Cumulative %
39+	.3	.3	39+	.8	.8
37, 38	1.4	1.7	37, 38	2.8	3.6
35, 36	2.4	4.1	35, 36	7.1	10.7
33, 34	7.4	11.5	33, 34	11.9	22.6
31, 32	12.0	23.5	31, 32	19.1	41.7
29, 30	19.3	42.8	29, 30	17.3	59.0
27, 28	17.6	60.4	27, 28	13.1	72.1
25, 26	14.1	74.5	25, 26	9.0	81.1
23, 24	8.5	83.0	23, 24	5.8	86.9
21, 22	6.4	89.4	21, 22	3.7	90.6
19, 20	4.8	95.4	19, 20	4.8	95.4
17, 18	3.2	96.4	17, 18	2.6	98.0
15, 16	2.0	98.4	15, 16	1.2	99.2
14 & <14	1.3	99.7	14 & <14	.7	99.9
Average	27.12		Average	28.77	
Range	8-41		Range	10-40	
No. of Classes	1077		No. of Classes	999	

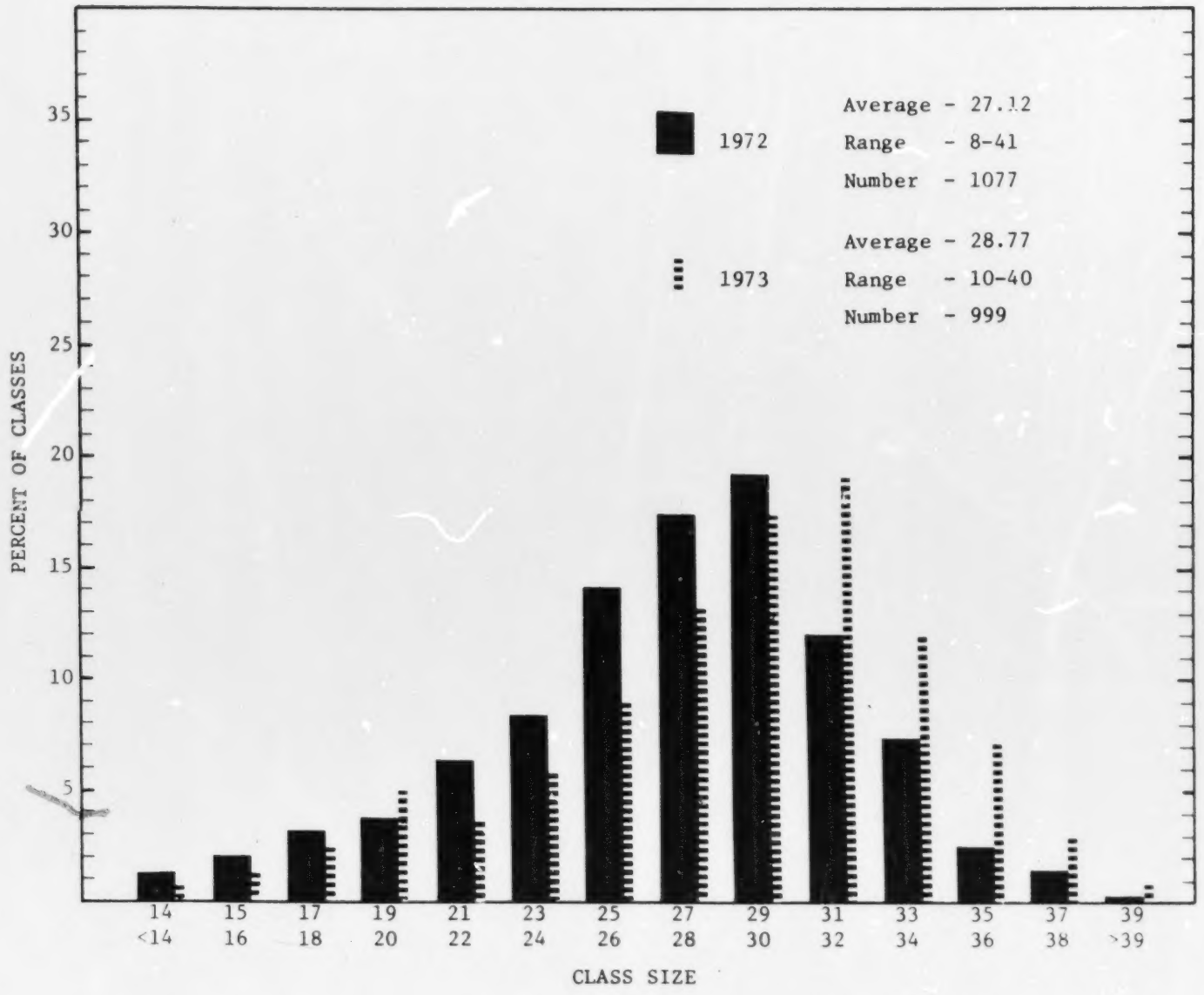

FIGURE 1 Percent of All Kindergarten to Grade 8 Regular Classes by Size As of September, 1972, and September, 1973.